

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,561	<b>Applicant(s)</b> IWAMOTO, KOTA	
	<b>Examiner</b> AKLILU k. WOLDEMARIAM	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 9/14/2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4,25-32,50,51 and 59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,25-32,50,51 and 59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. <u>9/14/2010</u> .                          |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application  |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> .                                  | 6) <input type="checkbox"/> Other: _____.                          |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :01/18/2008,12/05/2006,02/08/2006.

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### **DETAILED ACTION**

1. The Examiner has suggested claim amendment to overcome a potential 35 U.S.C 101 rejection during phone interview on 09/14/2010.

***Independent claims 1 and 51 maybe amended as follows:***

At line 2, after claim limitation, "comprising" insert *"one or more processors implementing in the following steps"*

***Independent claims 59 could be amended as follows:***

At line 2, after "A" insert "non- transitory"

In addition, the Examiner and applicant's representative discussed the following claim limitation which is recited in claim 1 *"by comparing the feature quantity for each divided small region of the inquiry image with a feature quantity for each divided small region of the reference image, using an image-region-based weight value calculated based on a probability for an editing process to be applied to an image for each local region."* A substantially similar limitation also occurs in claims 2 and 4. Although Applicant's representative admitted during the interview that the claim limitation is similar and was willing to amend the claims but chose not to for a reason unknown to the examiner.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1-4, 25-26, 51 and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al., "Yamaguchi" (U.S. Patent number 6, 345, 111).

Regarding claim 1, *Yamaguchi discloses* an image similarity calculation system for calculating an image similarity between an inquiry image and a reference image, *as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49) comprising:*

*a feature quantity extraction unit, i.e., recognition means for extracting a gesture input from user's image (see col.3, lines 63-65) configured to extract a feature quantity for each divided small region of the inquiry image, i.e., reduction image, the predetermined size image (N pixels. times. N pixels is extracted by raster scan (see col.24, lines 25-49); and*

*an image similarity calculation unit, i.e., face detection section or face element detection section (see items 406 and 407, fig.20) and similarity detection (see fig.21) configured to calculate the image similarity between the inquiry image and the reference image, by comparing the feature quantity for each divided small region of the inquiry image with a feature quantity for each divided small region of the reference image using an image-region-based weight value calculated based on a probability for an editing process to be applied to an image for each local region, i.e., reduction image, the predetermined size image (N pixels. times. N pixels is extracted by raster scan and as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49).*

Regarding claim 2, *Yamaguchi discloses* the image similarity calculation system according to claim 1, wherein the image similarity calculation unit, *i.e., face detection section*

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*or face element detection section (see items 406 and 407, fig.20) and similarity detection (see fig.21) is configured to use the region based weight value calculated based on a probability for an editing process to be applied to an image for each local region when comparing the feature quantity for each divided small region of the inquiry image and the feature quantity for each divided small region of the reference image, i.e., reduction image, the predetermined size image (N pixels. times. N pixels is extracted by raster scan and as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49).*

Regarding claim 3, *Yamaguchi discloses* the image similarity calculation system according to claim 1, wherein the image similarity calculation unit, *i.e., face detection section or face element detection section (see items 406 and 407, fig.20) and similarity detection (see fig.21)* and is configured to use the image-region-based weight value calculated based on a probability for an editing process to be applied to an image for each local region when calculating the image similarity between the inquiry image and the reference image, *i.e., face detection section or face element detection section (see items 406 and 407, fig.20) and similarity detection (see fig.21).*

Regarding claim 4, *Yamaguchi discloses* the image similarity calculation system according to claim 1, the image similarity calculation trait is configured to use the image- region-based weight value calculated based on a probability for an editing process to be applied to an image for each local region when comparing the feature quantity for each divided small region of the inquiry image and the feature quantity for each divided small region of the reference image and when calculating the image similarity between the inquiry image and the reference image, *i.e., reduction image, the predetermined size image (N pixels. times. N pixels is extracted by*

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*raster scan and as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49).*

Regarding claim 25, *Yamaguchi discloses* the image similarity calculation system according to claim 1, wherein the local region is a divided region so as to correspond to a small region in the inquiry image or the reference image *i.e., reduction image, the predetermined size image (N pixels. times. N pixels is extracted by raster scan).*

Regarding claim 26, *Yamaguchi discloses* the image similarity calculation system according to claim 1, wherein a small region in the inquiry image or the reference image is an equally sized rectangular region resulting from dividing an image, *i.e., reduction image, the predetermined size image (N pixels. times. N pixels is extracted by raster scan (see col.24, lines 25-49).*

Regarding claim 51, *Yamaguchi discloses* an image similarity calculation method for calculating an image similarity between an inquiry image and a reference image, *as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49)* performed by a computer and comprising the steps of:

extracting a feature quantity for each divided small region of the inquiry image, *i.e., recognition means for extracting a gesture input from user's image (see col.3, lines 63-65); and*

calculating the image similarity between the inquiry image and the reference image, *i.e., as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49),* by comparing the feature quantity for each divided small region of the inquiry image with a feature quantity for each divided small region of the reference image, using an image-region- based weight value calculated based on a probability

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for an editing process to be applied to an image for each local region, *i.e., reduction image, the predetermined size image (N pixels. times. N pixels is extracted by raster scan and as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49).*

Regarding claim 59, *Yamaguchi discloses* computer readable medium storing an image similarity calculation program for calculating an image similarity between an inquiry image and a reference image, the image similarity calculation program, *i.e., image memory (see item 1203) and as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49)* allowing a computer to perform a process of:

extracting a feature quantity for each divided small region of the inquiry image, *i.e., recognition means for extracting a gesture input from user's image (see col.3, lines 63-65); and*

calculating the image similarity between the inquiry image and the reference image, *i.e., as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49),*

based on a feature quantity comparison result output by the comparing step by, comparing the feature quantity for each divided small region of the inquiry image with a feature quantity for each divided small region of the reference image, using an image-region- based weight value calculated based on a probability for an editing process to be applied to an image for each local region, *i.e., reduction image, the predetermined size image (N pixels. times. N pixels is extracted by raster scan and as for each extracted image, similarity for dictionary pattern (reference dictionary pattern) of the face image is calculated (see col.24, lines 25-49).*

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***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 27-32 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi as applied in above, and in view of Peng et al., ("Probabilistic Feature Relevance Learning for content-Based Image Retrieval", computer vision and image understanding, vol.75, nos.1/2 July/August 1999, pp. 150- 154 from IDS).

Yamaguchi discloses similarity calculation system and Yamaguchi does not disclose one of regions which are divided so as to be partially overlap with each other, and wherein each small region is weighted in proportion to overlapping.

However, regarding claim 27, *Peng discloses* the image similarity calculation system according to claim 1 wherein a small region in the inquiry image or the reference image is one of regions which are divided so as to be partially overlap with each other, and wherein each small region is weighted in proportion to overlapping areas (overlapping), *i.e., computed with sub region and partitioning that will referred to divide (see page 152, col.2 and pages 155-156)*. It would have been obvious to one having ordinary skill in the art at the time when invention was made to incorporate the teaching as taught by Peng's into the system of Yamaguchi, and to do so would at least allow achieving overall optimal performance, [Peng, page 150, col.2].

Regarding claim 28, *Peng discloses* the image similarity calculation system according to claim 1, wherein a small region in the inquiry image or the reference image results from dividing

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only part of an image, *i.e., computed with sub region and partitioning that will referred to divide (see pages 155-156).*

Regarding claim 29, *Peng discloses* the image similarity calculation system according to claim 1, wherein the feature quantity is based on at least one of color information, edge information, texture information, shape information, and motion information, *i.e., generally, a set of features (color, shape, texture and etc (see pages 150-151).*

Regarding claim 30, *Peng discloses* the image similarity calculation system according to claim 1 wherein the feature quantity is at least one of an average value, a mode value, and a median value for color coordinates specified in color space systems such as RGB color space, HSV color space, YUV color space, YIQ color space, YCbCr color space, L\*a\*b\* color space, and XYZ color space, and Dominant Color, Color Layout, Scalable Color, Color Structure, Edge Histogram, Homogeneous Texture, Texture Browsing, Contour Shape, and Shape 3D specified in international standard ISO/IEC 15938-3, *i.e., generally, a set of features (color, shape, texture and etc (see pages 150-151, generally, a set of features).*

Regarding claim 31, *Peng discloses* the image similarity calculation system according to claim 1, wherein the editing process corresponds to at least one of superposing a ticker on an image, superposing a caption on an image, superposing a character on an image, superposing an object on an image, partially cutting an image, partially cropping an image, partially mosaicking an image, and partially blurring an image, *i.e., overlapping that will refer to superposing (see page 152, col.2).*

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Regarding claim 32, *Peng discloses* an image retrieval system (system) to retrieve images using an image similarity calculated in the image similarity calculation system according to claim, *i.e., the system carries out image retrieval using a K-NN search based on current weightings to compute the similarity between the query and all images in the database (see page 151, fig.2 and column 2).*

Regarding claim 50, *Peng discloses* an image retrieval system (system) to output an image similar to an inquiry image from a plurality of reference images based on a calculated image similarity using an image similarity calculation system according to claim 1, *i.e., the system carries out image retrieval using a K-NN search based on current weightings to compute the similarity between the query and all images in the database (see page 151, fig.2 and column 2).*

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AKLILU k. WOLDEMARIAM whose telephone number is (571)270-3247. The examiner can normally be reached on Monday- Friday 8:00 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bali Vikkram can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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09/24/2010